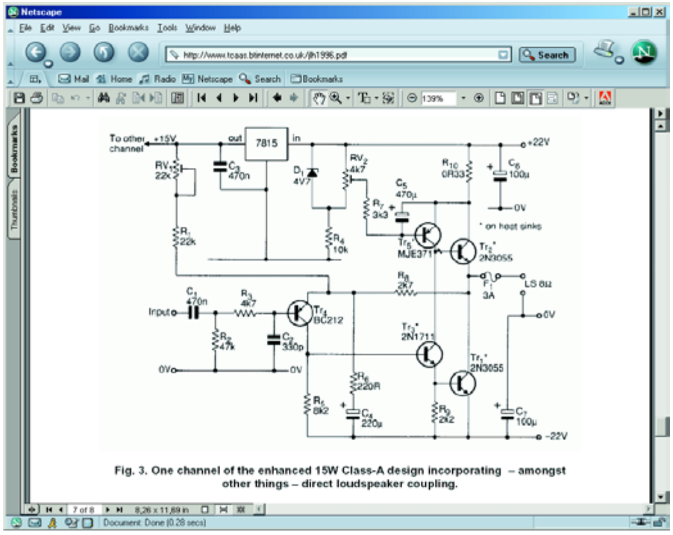

Fig. 3. One channel of the enhanced 15W Class-A design incorporating – amongst other things – direct loudspeaker coupling.

Audio Power Amps on the Internet

Fewer components, better sound?

Harry Baggen

Audio lovers will no doubt drool over the new Elektor preamp with digital control published in this issue. This, of course, calls for a matching power amplifier! Sure, there are enough high-quality Elektor designs to choose from, but it may also be interesting to trawl the Internet for alternative designs from all over the world.

Elektor Electronics is renowned when it comes to high-end audio designs. Our magazine frequently runs projects for pre-amplifiers and final amplifiers that are built by thousands of readers. The designs achieve excellent sonic quality at a fraction of the price of commercial products. It is in this tradition that we are proud to present, in this issue, our new digitally controlled preamp. The audio section of this preamp is marked by a minimalist design, guaranteeing superb sound reproduction while being successfully combined with a microcontroller and a display for extensive yet manageable control of it all.

Such an optimised design calls for a power amplifier with matching performance. Excellent candidates from our own stable include the IGBT Power Amp (June 1995), the Compact Amp (May 1997) and even the Crescendo Millennium Edition (April 2001).

Audiophiles may however also find interesting designs on the Internet, allowing them to 'follow their faith'. Some people will insist on keeping things as simple as possible, while others will not rest until their equipment is technically perfect.

The first category certainly embraces the legendary 'Zen' amplifier brought to us by American designer Nelson Pass, with follow-up versions carrying names like 'Son of Zen' and 'Bride of Zen'. Nelson is a master of electronic minimalism — the amplifier stage proper having just one active element, a power MOSFET. This is complemented by no more than a current source built around a power MOSFET and a transistor. The Zen amp delivers a modest 10 watts in Class A. Over the years a number of variations on the theme have emerged, many of these showing great activity from Nelson Pass himself.

Nelson Pass runs a website, **Pass DIY** [1], containing home-brew designs and covering all Zen projects in great detail.

Another website describing interesting audio power amplifier projects is called **ESP, Elliott Sound Products** [2]. One of the projects is ominously called 'Death of Zen', this is a Zen variant employing bipolar transistors. A version actually built from this circuit diagram is found at **Bebe** [3]. Believe it or not, it is built around the legendary (and still available) power transistor type 2N3055!

Another well-known and highly respected designer of, among others, class-A power amplifiers is John Linsley Hood, who in the 1960s became famous through his designs published in *Wireless World* (now *Electronics & Wireless World*). A large number of these 'evergreen' articles may be found at the **Class-A Amplifier Site** [4]. The site also supplies circuit diagrams of a headphone amplifier and a preamplifier as well as power amplifier projects from other designers.

Electronics enthusiasts who would rather rely on a more extensive design with a symmetrical layout and higher output power may be interested in the well-known power amplifier proposed by W. Marshall Leach. An extensive description is supplied by the designer himself at **The Leach Amp** [5].

A well elaborated design for an amplifier with relatively high output power (2 x 350 W into 8 Ω) may be found at a website called **A and T Labs** [6]. The power output section is built around complementary power MOSFETs. Another peculiarity of the design is the application of a switch-mode power supply unit (SMPSU) with a whopping output of 1 kW, allowing the entire assembly to be housed in a relatively low 19-inch rack.

To close off this article we'd like to draw your attention to **Schematic.info** [7], a website packed with circuit diagrams of twentieth-century audio classics like Dynaco, SAE, Quad, NAD and Crown. Take your pick!

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